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U.S. DEPARTMENT OF AGRICULTURE

Office of Information

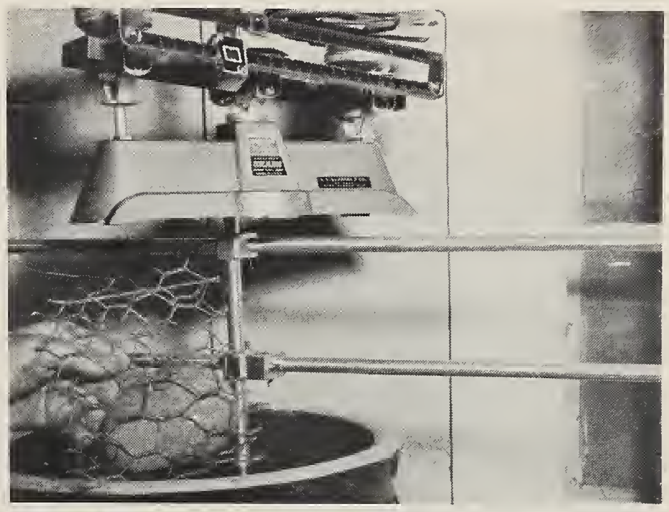
PHOTO SERIES NO. 28

MARKETING RESEARCH—BIOLOGICAL SCIENCES

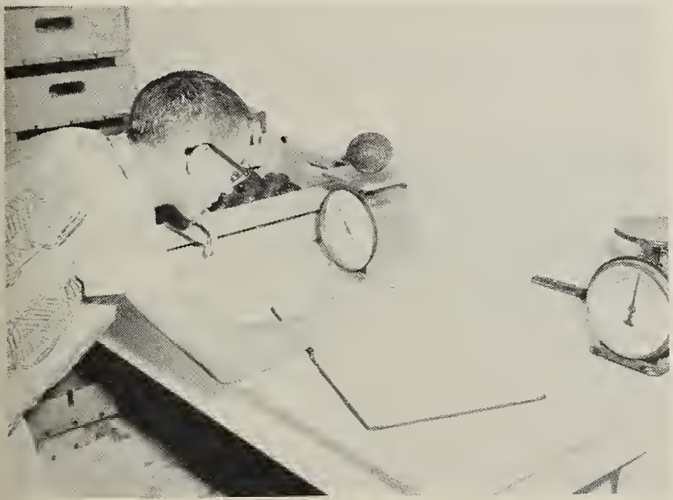
OCTOBER 1958

USDA photographs showing activities at one of the Agricultural Marketing Service's marketing research laboratories. Biological science research conducted at this field station in Miami, Florida, is primarily on the handling, storage, and transportation of avocados, mangoes, and limes. These photographs were taken for the Agricultural Marketing Service.

N-26594--A horticulturist at the biological sciences laboratory, Miami, Fla., determines specific gravity of mangoes. In the case of mangoes the specific gravity may serve as a possible maturity index. Horticulturist is Dr. John Popenoe, until recently with the laboratory.



N-26595--Determining specific gravity of mango at the biological sciences laboratory, Miami, Fla., for use in maturity studies.

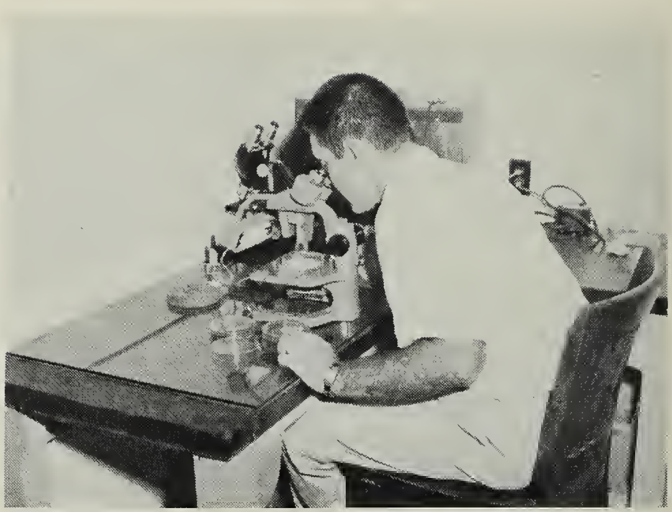


N-26596--Dr. Carl Campbell, plant physiologist, biological sciences laboratory, Miami, Fla., recording weights of avocados following storage to determine weight losses at various storage temperatures.

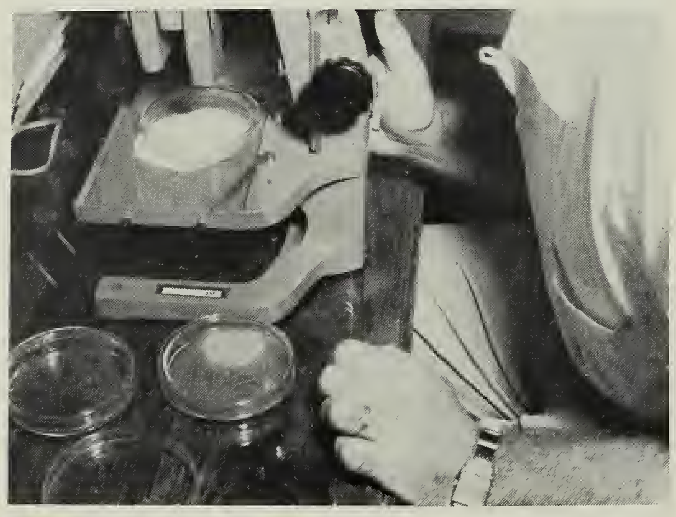
N-26597--Dr. Carl Campbell, plant physiologist, biological sciences laboratory, Miami, Fla., cutting avocados to determine flesh characteristics following storage at various temperatures.

Magazines and newspapers may obtain glossy prints of any of these photographs from the Photography Division, Office of Information, U. S. Department of Agriculture, Washington 25, D. C. Others may purchase prints (8 x 10) at $1.00 each from the same address.

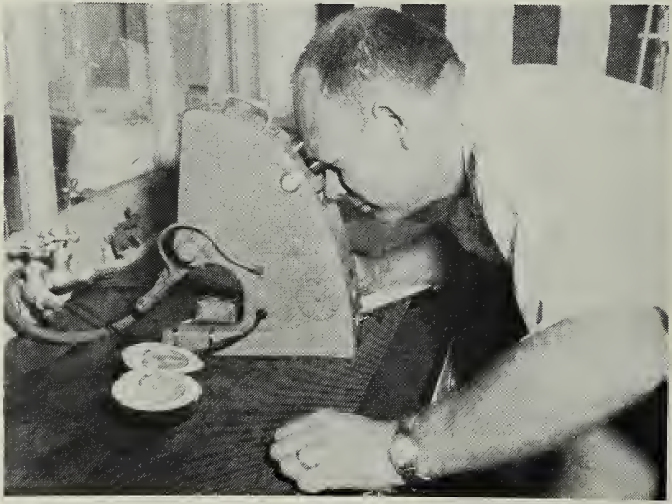
N-26598--Cutting avocados at the biological sciences laboratory, Miami, Fla., to determine flesh characteristics following storage at various temperatures.



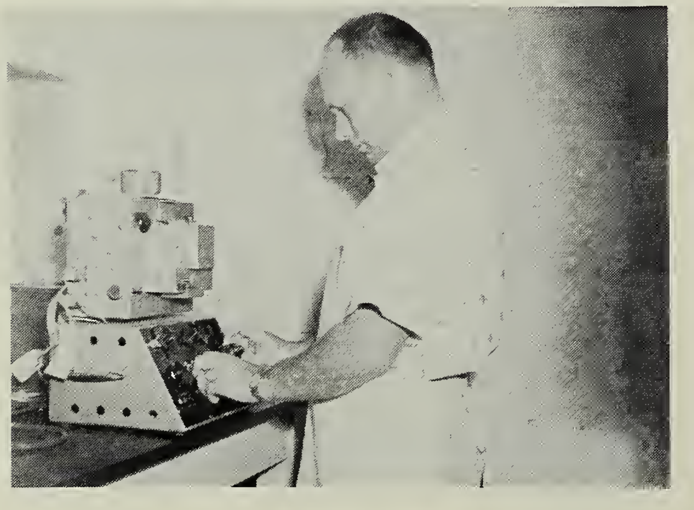
N-26599--Plant physiologist, biological sciences laboratory, Miami, Fla., uses a microscope to identify fungus found on avocados. The plant physiologist is Dr. Aristotel Pappelis, until recently with the laboratory.



N-26600--Using a microscope at the biological sciences laboratory, Miami, Fla., to identify fungus cultured from avocados.



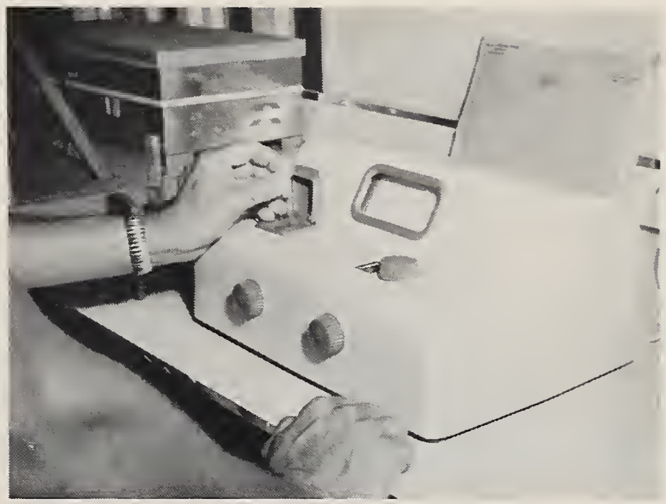
N-26601--Dr. T. T. Hatton, Jr., senior horticulturist, biological sciences laboratory, Miami, Fla., uses refractometer to determine oil content of avocados.



N-26602--Dr. T. T. Hatton, Jr., senior horticulturist, biological sciences laboratory, Miami, Fla., uses the colorimeter in making readings of mango juice.

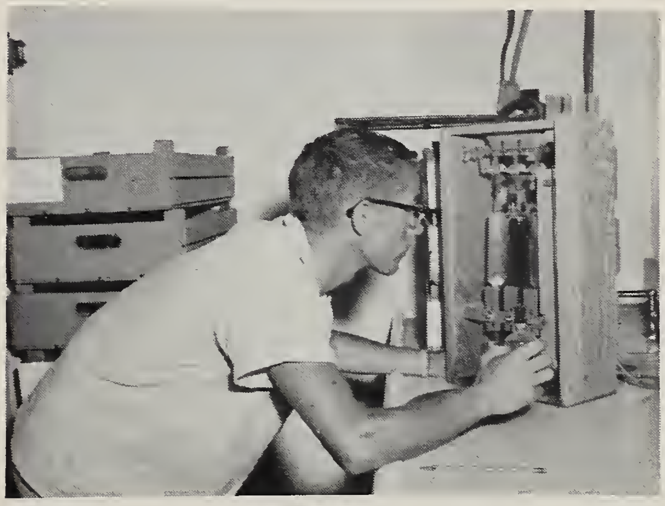
N-26604--Dr. T. T. Hatton, Jr., senior horticulturist, biological sciences laboratory, Miami, Fla., pouring a standard solution of tannic acid into a colorimeter tube for use in determining phenolic content in avocados.

N-26605--Dr. Carl Campbell, plant physiologist, Miami, Fla., placing a tube of mango solution into the colorimeter which analyzes sugars in mangoes.

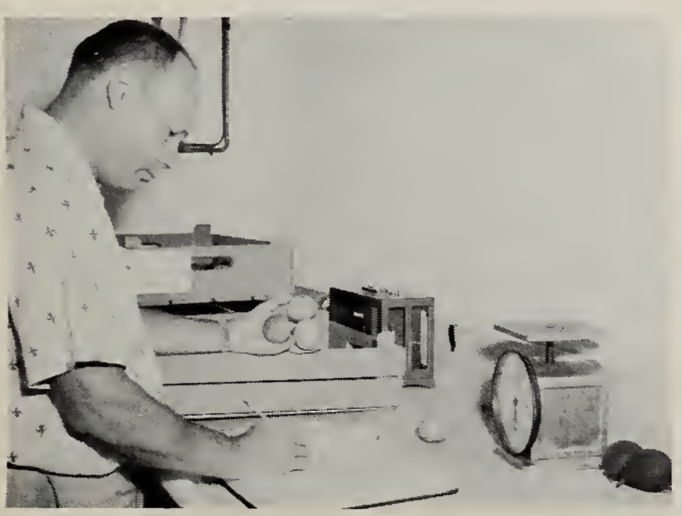


N-26606--A tube of avocado juices being placed into the colorimeter at the biological sciences laboratory, Miami, Fla., to test for reducing sugars in avocados.

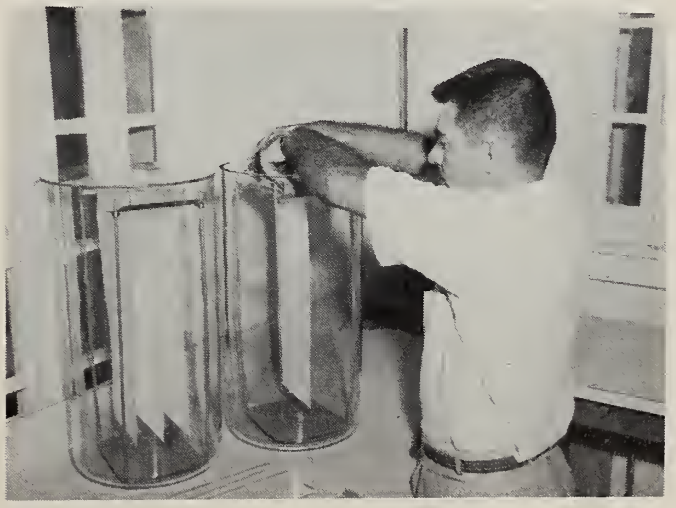
N-26607--Dr. Carl Campbell, plant physiologist, biological sciences laboratory, Miami, Fla., uses automatic calculator in making statistical analysis of research data.



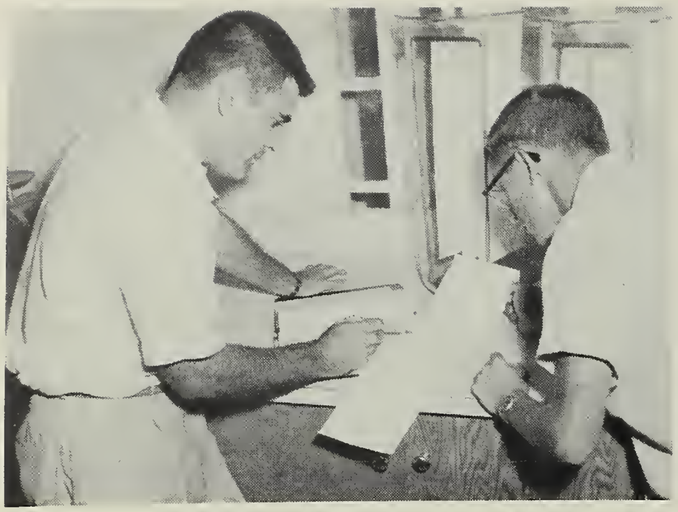
N-26608--Dr. Carl Campbell, plant physiologist, biological sciences laboratory, Miami, Fla., analyzing atmosphere of mango and avocado storage chambers with an Orsat gas analyzer.



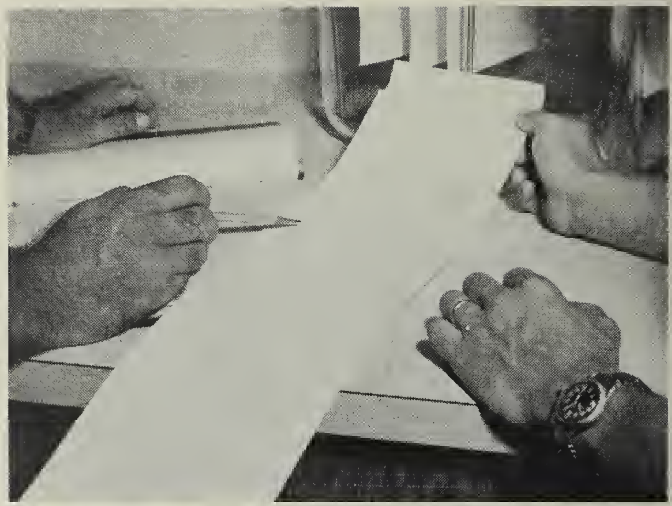
N-26610--Dr. T. T. Hatton, Jr., senior horticulturist, biological sciences laboratory, Miami, Fla., making a periodic check of color and decay of tomatoes stored at temperatures to simulate transit conditions.



N-26611--Plant physiologist at the biological sciences laboratory, Miami, Fla., prepares "tank" for chromatographic separation of compounds found in avocados. Plant physiologist is Dr. Aristotel Pappelis until recently with the laboratory.

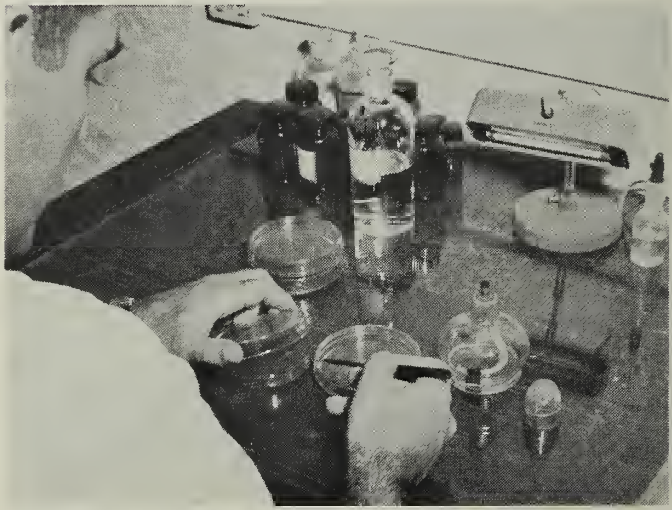


N-26612--Dr. Aristotel Pappelis and Dr. Carl Campbell, plant physiologists at the biological sciences laboratory, Miami, Fla., discuss chromatographs of the compounds separated from avocado extracts. Dr. Pappelis has left his position with the laboratory.



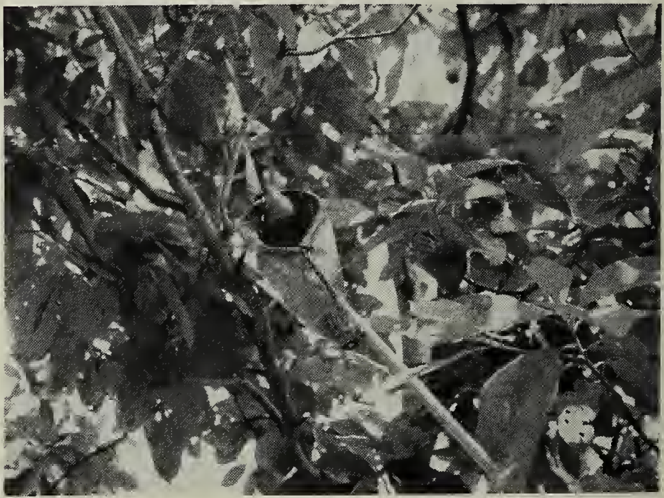
N-26613--Examining chromatograph records at the biological sciences laboratory, Miami, Fla., of avocado extracts which indicate presence of certain chemical constituents.

N-26614--Plant physiologist at biological sciences laboratory, Miami, Fla., transferring fungus isolated from avocado to Petri dish for identification.



N-26615--Transferring fungus separated from avocado to Petri dish for identification. (Biological sciences laboratory, Miami, Fla.)

N-26621--Dr. Carl Campbell, plant physiologist, biological sciences laboratory, Miami, Fla., picking mangoes for use in research on handling, storage, and transportation.



N-26622--A canvas bag with a long adjustable aluminum pole is used to pick mangoes. A cutting edge on the bag severs the mango stem, and fruit falls into bag.